

11.1, section IX of the ASME Code. For thicknesses exceeding three-fourths inch, suitable U grooves should be employed. A welding sequence shall be used so as to equalize welding stresses.

(j) Postweld heat treatment of repaired cracks shall be performed in accordance with the rules specified in PW-39, section I and UW-40, section VIII of the ASME Code for boilers and pressure vessels respectively.

(k) Welded repairs of cracks shall be nondestructively tested in accordance with the rules specified in PW-40, section I, and UW-51, section VIII of the ASME Code for boilers and pressure vessels respectively.

(l) After cracks originating in tube or rivet holes are repaired by welding, the holes shall be properly reamed and the weld reinforcing ground flush with the plate in way of rivet heads.

(m) Flat tube sheets in fire-tube boilers which have corroded or where cracks exist in the ligaments may be repaired by welding.

(n) Welding repairs to drums of power boilers, except as otherwise permitted in this subpart, are prohibited.

#### §59.10-10 Corroded surfaces.

(a) Corroded surfaces in the calking edges of circumferential seams may be built up by welding to the original thickness under the following conditions:

(1) The thickness of the original metal to be built up between the rivet holes and the calking edge shall not be less than one-fourth of the diameter of the rivet hole, and the portion of the calking edge to be thus reinforced shall not exceed 30 inches in length in a circumferential direction.

(2) In all repairs to circumferential seams by welding, the rivets shall be removed over the portions to be welded for a distance of at least 6 inches beyond the repaired portion.

(3) After repairs are made the rivet holes shall be reamed before the rivets are redriven.

(b) It is not permissible to build up or reinforce a grooved or corroded area of unstayed internal surfaces by means of welding, except that widely scattered pit holes may be built up by welding.

(c) Where external corrosion has reduced the thickness of flat plates

around hand holes to an extent of not more than 40 percent of the original thickness and for a distance not exceeding 2 inches from the edge of the hole, the plate may be built up by welding.

(d) Where stayed sheets have corroded to a depth not exceeding 40 percent of their original thickness, they may be reinforced or built up by welding. Where the staybolts are fitted with riveted heads, the staybolts in the reinforced area shall be renewed in accordance with the provisions of §52.20-15 of this subchapter, but where the staybolts are fitted with nuts, the nuts may be removed and after reinforcing has been applied, collars may be welded around the staybolts in lieu of the nuts. Such reinforced areas shall not exceed 400 square inches nor more than 30 inches in one direction. Two such areas in any one plate may be reinforced: Provided, that the distance between the reinforced surfaces is not less than 30 inches.

(e) When the corroded portion of a staybolted surface exceeds 400 square inches, it is permissible to make repairs by cutting out the defective portion and replacing it with a new plate, the edges of the new plate to be welded in position. In such cases, new staybolts shall be fitted in accordance with the requirements of §52.20-15 of this subchapter and where welding is performed through a line of staybolts, welded collars as required by Figure 52.01-3 of this subchapter shall be used to attach the staybolts.

(f) Eroded seams of welded pressure vessels may be repaired by rewelding the wasted portion. The wasted section of the seam shall be excavated sufficiently by grinding, flame or arc gouging or chipping to ensure proper weld penetration. Rewelded seams shall be nondestructively tested in accordance with section VIII, ASME Code.

#### §59.10-15 Rivets and staybolts.

(a) It is not permitted to reinforce or build up by welding the heads of rivets or staybolts that have deteriorated. Such rivets or staybolts shall be replaced. The seal welding of rivet heads to secure tightness is prohibited.

(b) Where leaks develop around staybolts which are otherwise in good